

BITUMINOUS MACADAM ROADS BUILT BY THE PENETRATION METHOD

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It is the purpose of this paper to discuss the bituminous macadam road built by the penetration method, a type which by reason of its low first cost and the small plant equipment necessary for its construction is well adapted to main country highways and to long stretches of road between large centers of population.

The first question which comes up in the matter of road building is that of type, and in the selection of this a great responsibility rests upon the road officials. There has probably been as much economic waste entailed by the use of an improper type of road as in any other way. This means that not only have too cheap roads been built, but also that in many cases the error has been directly opposite to this.

Evidently there is no definite rule by which this selection may properly be made, but in every case there are certain principles which govern and certain qualities which are desirable to attain in a road. The following requirements for an ideal pavement are taken from Tillson's "Street Pavements and Paving Materials."

1. Low in first cost.
2. Hard and durable to resist wear and disintegration.
3. Easily cleaned.
4. Light resistance to traffic.
5. Afford good foothold for horses.
6. Cheaply maintained.
7. Suitable for every class of traffic.
8. Impervious to water, yielding neither dust nor mud.

There is no doubt that the first requisite has more weight today than any of the others, and the surface sought is the one possessing the other seven qualities at a minimum expense.

Until the advent of motor traffic the water-bound macadam road was recognized as the most popular type of improved road for the main travelled country highways, by reason of its